

California Public Utilities Commission

Workshop 2 Panel 1

*“Lessons Learned from Recent Catastrophic
Incidents: Insights for Improved Resilience and
Recovery”*

Robert Lewin
Director

Santa Barbara County Office of Emergency Management



Discussion Items

- Lessons Learned from the Thomas Fire and Montecito Debris Flow
 - Pre-Positioning utilities
 - Utility restoration and evacuation repopulation
- How will PSPS impact local communities and what should we do
- Developing a Multi-Day Power Outage Plan

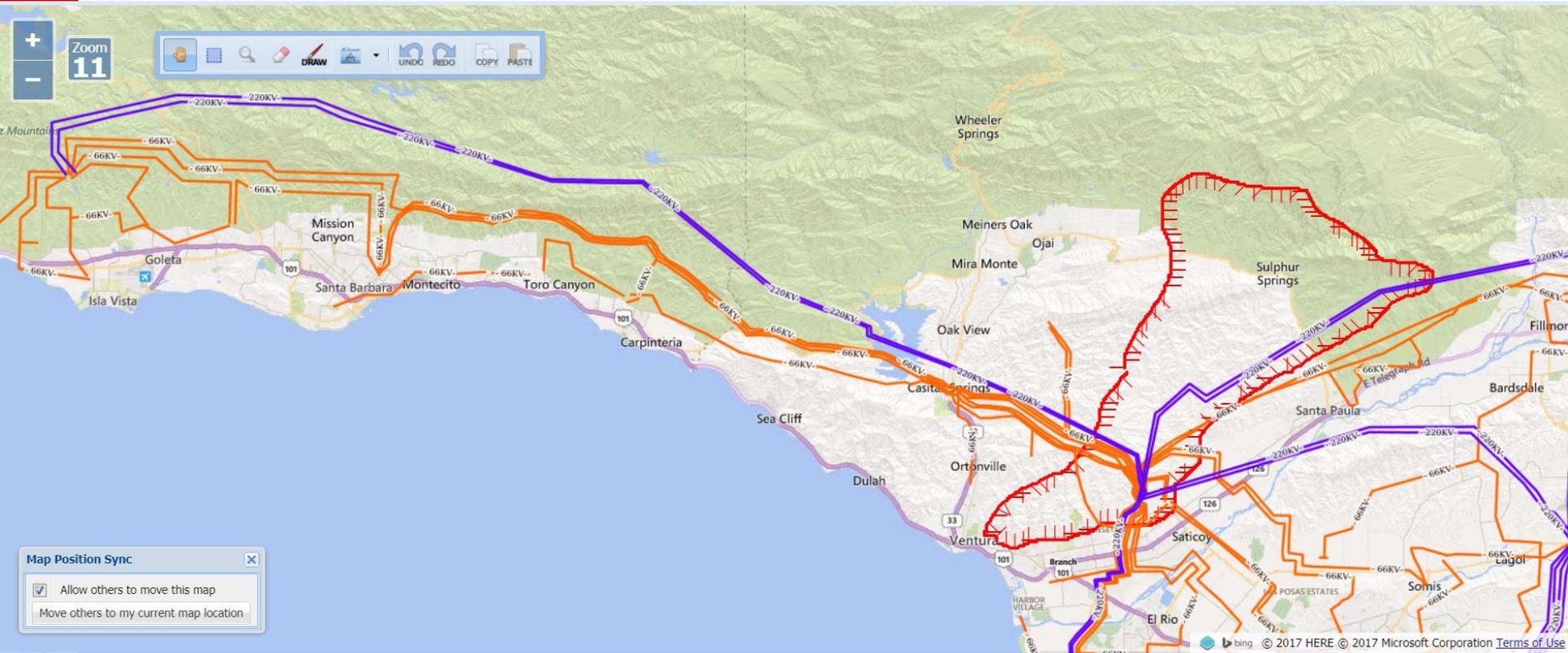
Thomas Fire



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SCE 220 kV and 66 kV lines in South Coast- early Thomas Fire



The Thomas Fire

- Largest wildfire in California history
 - 281,893 acres; began 12/4 (surpassed by Mendocino Complex 2018)
- First day of fire in Ventura County it damaged the transmission lines serving all Santa Barbara County SCE service area for 6 hours.
- Continuous interruptions for several days. Unstable for weeks
- Crossed into Santa Barbara County 12/9
- 1,063 structures destroyed Ventura/SB County
 - SB Co: 27 structures destroyed; 53 damaged
- 30,000 evacuated in SB County for two weeks

Thomas Fire

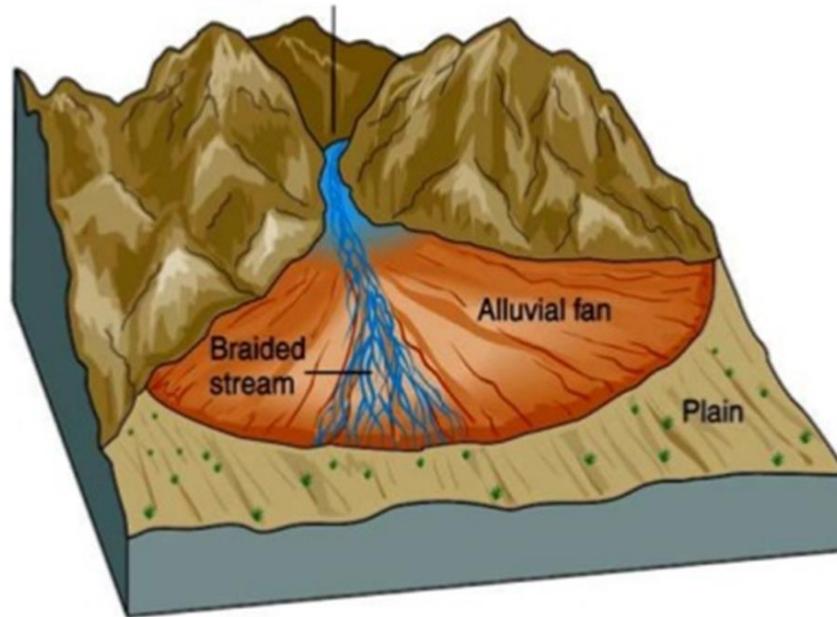
- Back up generators to both the dispatch center and the EOC failed to automatically start due to surges. Required manual starts.
- Developed with SCE a Multi-Day Power Outage Contingency Plan
- SCE had Agency Representatives at the EOC the first night and continuously for both disasters.
- Identified critical facilities with and without generators
- SCE had 14 generators staged with electricians

Montecito 1/9 Debris Flow

- SoCal Gas High Pressure Gas line Explosion
- Electrical distribution system destroyed
- Water system supply and distribution system damaged
- Sanitary System damaged – treatment facility okay
- Cable and Cellular systems damaged
- Cal Fire Incident Management Team created an “Infrastructure Branch”
- EOC had 0630 conference calls with water and sanitary districts
- Utilities were alerted to prepare before the storm

Alluvial Fan

Simplified Model



Alluvial fans are highly complex, steeply-sloping ($>1 - 2^0$) fluvial systems found at the base of active mountain ranges. They show significant changes down fan from proximal debris flow deposits to mid-fan braided stream deposits to distal fan sheet flow and playa deposits beyond the fan toe.

The Storm

- 2,323 first responders
- 23 lives lost or missing
- 28 injured
- 50 evacuated by air
- 1000 large and small animals evacuated/rescued



Photo Courtesy of Santa Barbara News Press



The Storm

- Hwy 101 closed for 12 days
- Hwy 192 remains closed to through traffic
- Hwy 192 - 4 bridges destroyed, 2 damaged
- All utilities needed repair (gas, water, electricity, sewer)
- 11 Debris basin & 12 creek channels clearing begins (Montecito and Carpinteria)



Search & Rescue



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- Extensive search for missing persons
- Family Assistance Center opens
- Additional 70 people evacuated by air
- 59 structures destroyed/470 damaged

Utilities

- Water
- Sanitary
- Electricity
- Natural Gas
- Cable
- Cellular

2018 JANUARY STORM

Date: 01/10/2018 Time: 10:00AM
 Fire Information Line: (805) 696-1188

Emergency Water Distribution

MONTECITO WATER DISTRICT PROVIDING EMERGENCY WATER DISTRIBUTION FOR PUBLIC HEALTH AND SAFETY

Potable water distribution sites are operating in these two locations from 1:00 pm – 10:00 pm on Wednesday, January 10, as confirmed by Santa Barbara County Public Works:

- 1) Shopping center at South West corner of East Valley Road and San Ysidro Road (Upper Village).
- 2) Montecito Fire Station at Cold Spring and Sycamore Canyon Rd. (192).

This water is only for Montecito District customers in need of water.

Additional distribution locations may become available and will be announced.

Boil Water Notice and further information on water treatment can be found on the District web site: <http://www.montecitowater.com/latest-news/boil-water-notice-01-09-2018/>

WATER OUTAGE IS ANTICIPATED THROUGHOUT THE DISTRICT.

Damage to water supply infrastructure is extensive. The District will provide an estimated time for repairs as soon as more information is available.



Montecito Water District

Damage

- the District's distribution system through nine transmission pipeline breaks
- 15 distribution main breaks
- 25 sheared off fire hydrants
- 290 damaged service connections
- 300 total leaks
- Mutual Aid was used



Setting a Target Date

Asked the Utilities to commit to a restore date – January 30, 2018

- All utilities safe and operating by January 24th.
- Repopulation by January 27th
- Potable water all areas in 30 days after the disaster





Where water was restored it required a boil water order

Did not delay re-population because of potable water



The Threat to Utilities Continues

- High potential for more debris flows now and after future fires
- How do we build in resiliency

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Santa Barbara County Tells Utility Companies to Plan for Future Debris Flows

Water, sewer, gas and power agencies had major infrastructure damage after the Jan. 9 storm and are advised to plan for the next one

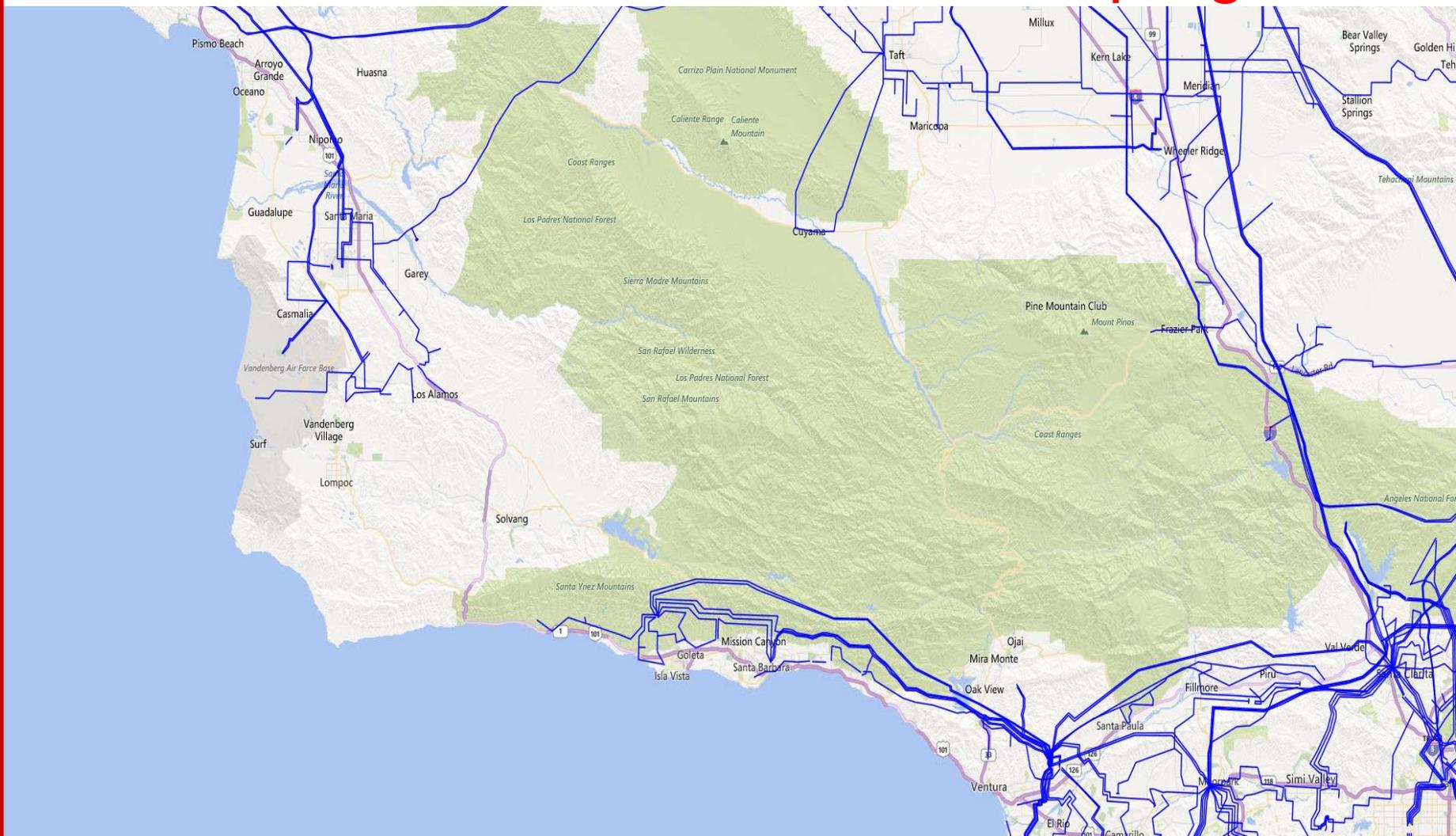


Montecito Sanitary District crews repair a sewer main in San Ysidro Creek and encase it in concrete after Jan. 9 debris flow damage. (Montecito Sanitary District photo)

1 > of 9



- SB County PG&E and SCE transmission lines – Living in a cul-de-sac
- Each has its own distinct PSPS program



SCE PSPS Timeline

PUBLIC SAFETY POWER SHUTOFF

Last resort public safety measure to mitigate wildfire risk

4-7 DAYS AHEAD



When forecasts indicate extreme weather, SCE will begin predictive modeling to assess potential impact.

3 DAYS AHEAD



SCE monitors fire weather watch alerts from the National Weather Service (NWS) and continues to refine predictive models.

2 DAYS AHEAD



Extreme fire weather conditions forecasted and NWS Red Flag Warning issued. Coordinate with local government and agencies (e.g. emergency responders) first. Initiate customer notifications on possible power shutoff.

1 DAY AHEAD



Extreme fire weather conditions imminent; continued modeling and more accurate forecasts determine affected areas. Continue to coordinate and communicate with local government, agencies and customers of possible power shutoff.

POWER SHUTOFF



Extreme fire weather present and dangerous conditions validated by field resources; notify local government, agencies and customers of power shutoff.

POWER RESTORATION



Extreme fire weather subsides to safe levels and conditions validated by field resources; inspections and patrols of equipment begin, then power is restored to affected communities; agencies and customers notified of power restoration.

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**SANTA BARBARA COUNTY
DRAFT CONTINGENCY PLAN
FOR
MULTI-DAY POWER OUTAGE
August 2018**



Key Components

- Objectives
- Decision Point and Outage Policy Group
- Critical Facilities and Equipment
- Response Process
- Evac Center/Shelter Information
- Prioritization List and Map

Multi Day Power Outage Plan Objectives

- Provide for the safety of the public, agency employees, vendor personnel and first responders
- Ensure that firefighting efforts are uninterrupted from a power outage
- Protect the continuity of critical infrastructure, processes, essential services and facilities with the installation of temporary power generation if back-up power doesn't already exist.
- Ensure that the needs of medically dependent individuals and those with Access and Functional Needs are provided for.
- Ensure a fuel distribution plan is developed that is implementable and provides for continuous operation of the generators



- Ensure that Emergency Shelters, Evacuation Centers, and Cooling Centers are established and supported
- Support the cell and internet providers in providing uninterrupted service
- Provide timely and accurate public messaging
- Maintain close coordination and communication between all affected public agencies, incident management, PG&E, and SCE for the activation of the Contingency Plan
- Identify and mitigate impacts to agriculture
- Identify educational institutions impacted by the outage
- Provide information to hospitality, food services, and other impacted commercial operation
- Focus on the coordination with law enforcement to maintain accountability of the portable generators and the protection of the public

Discussion